



## Preliminary Information

### PIP5818 M1L P1789 Additional Diagnostics

#### Models

Brand:	Model:	Model Years:	VIN:		Engine:	Transmissions:
			from	to		
Chevrolet	Corvette	2020 - 2021	All	All	LT2	M1L

Involved Region or Country	North America
Condition	<p><b>DTC P1789 Service Transmission Message, Unable to Power off Vehicle, Dead Battery</b></p> <p>Some customers may comment on a service transmission message, the car would not power down, a shift to park message, and may have come in with a dead battery.</p> <p>Upon charging the battery, the dealer may find a DTC P1789 current or in history, along with many other DTCs in the vehicle. The DTC P1789 may have also been erased due to the dead battery.</p>
Cause	<p>One cause for DTC P1789 to set is debris on the park position sensor magnet causing an incorrect position reading to the TCM, cause of DTC P1789 is a loss of 5 V reference 2 into the transmission and various other concerns listed below.</p>

If the vehicle sets a p1789 one of the default actions of the DTC is not allowing the vehicle to power down. Another default action is not allowing the vehicle to start. When this condition happens, multiple other modules may start setting codes as system voltage drops. It is very important to record ALL diagnostic trouble codes in all modules current and history.

The transmission control module will only set a majority of its DTCs with the engine running. If there is an internal transmission concern that caused P1789 to set and you clear the codes from history and CANNOT restart the car those codes will not reset but the conditions for setting them could still be present. So, having that information can prevent part replacement that will not correct a concern.

One cause for P1789 to set is debris on the park position sensor magnet causing an incorrect position reading to the TCM. In GDS2 look in the Electronic Transmission Range Select data list and check the parameter Transmission Park Lock Actuator Position in mm. The park position sensor should read approximately 4.5 mm. This value is learned in the service fast learn procedure (SFL) and if park position gets .5 mm from learned home position it will result in P1789.

If the park position is above 5.0 mm use DT-52388 and appropriate procedure Transmission Park Mechanism Release (Coupe or Convertible) and manually move the park rod while monitoring position in GDS. Value should be about 4.5 mm in park and about 14.3 mm full travel out of park. If the value tracks with movement of the release tool, pull the rod all the way out of park and let the tool snap back several times and see if the value returns under 5.0 mm. If the value returns under 5.0 mm attempt to start the vehicle. If the vehicle will restart DO NOT DRIVE the vehicle. Warm the vehicle up and perform SFL.

After performing SFL change the cartridge filter following the procedure Automatic Transmission Fluid Filter and Seal Replacement (Cartridge). Test drive vehicle at this point and make sure no DTCs reset.

If the Park position sensor does track when using the override tool but will not return under 5.0 mm and vehicle will not start, then transmission replacement will be needed. None of the park components are serviceable.

Another cause of P1789 is a loss of 5 V reference 2 into the transmission. As stated before the TCM will not set DTCs against failed 5 v reference if the engine is not running. 5 V ref 2 into the transmission feeds Transmission Park Lock Position Sensor and Automatic Transmission Fluid Pressure Sensor 2 through the X1 connector and Automatic Transmission Fluid Pressure Sensor 3, Shift Fork 3 Position Sensor, Shift Fork 4 Position Sensor and Shift Fork 5 Position Sensor through the X2 connector at the transmission. In transmission data list in GDS monitor the pressure sensors 2 and 3 with the engine off they should be near 0 PSI. If the 5-volt reference is missing or shorted the pressure sensors will read high pressure with the engine off (Around 280 PSI).

5 V reference 2 shorted to ground will take down all 6 items listed above, (park position, pressure sensors 2 and 3 along with fork 3,4 and 5 position sensors) disconnecting X1 or X2 one at a time may help isolate where in the transmission the short has occurred. Example disconnecting X2 at the transmission and the park position and pressure sensor 2 return to normal readings then the short would be internal to the trans related to the X2 connector and would require inspection of the internal harness or even sensor module which is serviceable.

If either of the 5-volt reference 2 inputs to the transmission is open between the TCM and transmission it will result in either X1 or X2 supplied items being down. inspect related terminals for pin fit, backed out terminals or short to ground on the affected circuit.

This document will be deleted once the information contained within is readily available in Electronic Service Information.

#### Warranty Information

For vehicles repaired under powertrain warranty coverage please use the associated labor operation for the repair performed.

Version History

Version	1
Modified	08/19/2021 - Created on.



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